

Appl. Serial No. 10/817,209  
Preliminary Amendment filed November 15, 2007

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### AMENDMENTS TO THE CLAIMS

Please amend claims by adding claims 12-22 as follows. This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Original) A computer information product, comprising:
  - a computer readable medium;
  - data stored on the computer readable medium that, when interpreted by a computer, defines a bitstream for compressed image data, comprising:
    - for each image, a picture header followed by image scan data,
      - wherein the image scan data includes data corresponding to a plurality of macroblock rasterscans, wherein the data for each macroblock rasterscan includes data for a plurality of macroblocks for a band of lines in the image followed by padding, whereby data for each macroblock rasterscan terminates on a data boundary; and
      - wherein the picture header references an image scan index that indicates a number of macroblock rasterscans in the image scan data and a number of lines per macroblock rasterscan, followed by entries of the index, and
      - wherein each entry in the index includes an offset of the macroblock rasterscan in image scan.
2. (Original) The computer information product of claim 1, wherein the picture header references the image scan index by referencing an image descriptor, and wherein the image descriptor includes a reference to the image scan index.
3. (Original) A method for reading a bitstream of compressed image data, wherein the bitstream includes, for each image, a picture header followed by image scan data, wherein the image scan data includes data corresponding to a plurality of macroblock rasterscans, wherein the data for each macroblock rasterscan includes data for a plurality of macroblocks for a band of lines in the image followed by padding, whereby data for each macroblock rasterscan terminates on a data boundary; and wherein the picture header references an image scan index that indicates a number

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02 FC:1202 160.00 DA

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of macroblock rasterscans in the image scan data and a number of lines per macroblock rasterscan, followed by entries of the index, and wherein each entry in the index includes an offset of the macroblock rasterscan in image scan, the method comprising:

- accessing the picture header to locate the image scan index;
- accessing the image scan index to locate, for each macroblock rasterscan, the offset of the macroblock rasterscan in the image scan data;
- retrieving each macroblock rasterscans according to the offsets from the image scan index.

4. (Original) The method of claim 3, further comprising decoding each of the macroblock rasterscans in parallel.

5. (Original) The method of claim 3, wherein the picture header references the image scan index by referencing an image descriptor, wherein the image descriptor includes a reference to the image scan index, wherein the accessing the picture header comprises:

- accessing the picture header to locate the image descriptor;
- accessing the image descriptor to locate the image scan index.

6. (Original) A computer program product, comprising:

- a computer readable medium;
- computer program instructions stored on the computer readable medium that, when executed by a computer, instruct the computer to perform a method for reading a bitstream of compressed image data, wherein the bitstream includes for each image, a picture header followed by image scan data, wherein the image scan data includes data corresponding to a plurality of macroblock rasterscans, wherein the data for each macroblock rasterscan includes data for a plurality of macroblocks for a band of lines in the image followed by padding, whereby data for each macroblock rasterscan terminates on a data boundary; and wherein the picture header references an image scan index that indicates a number of macroblock rasterscans in the image scan data and a number of lines per macroblock rasterscan, followed by entries of the index, and wherein each entry in the index includes an offset of the macroblock rasterscan in image scan, wherein the method comprises:

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accessing the picture header to locate the image scan index;  
accessing the image scan index to locate, for each macroblock rasterscan, the offset of the macroblock rasterscan in the image scan data;  
retrieving each macroblock rasterscans according to the offsets from the image scan index.

7. (Original) The computer program product of claim 6, wherein the method further comprises decoding each of the macroblock rasterscans in parallel.

8. (Original) The computer program product of claim 6, wherein the picture header references the image scan index by referencing an image descriptor, wherein the image descriptor includes a reference to the image scan index, wherein the accessing the picture header comprises:

accessing the picture header to locate the image descriptor;  
accessing the image descriptor to locate the image scan index.

9. (Original) A method for writing a bitstream of compressed image data, comprising:

for each image, defining a picture header followed by image scan data, including:

for each band of lines in the image, defining a bitstream in memory for a macroblock rasterscan using data for a plurality of macroblocks for the band of lines followed by padding that makes each macroblock rasterscan terminate on a data boundary;

defining the image scan data to include data corresponding to a plurality of macroblock rasterscans; and

defining an image scan index that indicates a number of macroblock rasterscans in the image scan data and a number of lines per macroblock rasterscan, followed by entries of the image scan index;

creating entries in the image scan index such that each entry in the index includes an offset of the macroblock rasterscan in image scan;

creating a reference in the picture header to the image scan index, and

writing the picture header followed by the image scan data in the bitstream.

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10. (Original) A computer program product, comprising:

- a computer readable medium;

- computer program instructions stored on the computer readable medium that, when executed by a computer, instruct the computer to perform a method for writing a bitstream of compressed image data, comprising:

- for each image, defining a picture header followed by image scan data, including:

- for each band of lines in the image, defining a bitstream in memory for a macroblock rasterscan using data for a plurality of macroblocks for the band of lines followed by padding that makes each macroblock rasterscan terminate on a data boundary;

- defining the image scan data to include data corresponding to a plurality of macroblock rasterscans; and

- defining an image scan index that indicates a number of macroblock rasterscans in the image scan data and a number of lines per macroblock rasterscan, followed by entries of the image scan index;

- creating entries in the image scan index such that each entry in the index includes an offset of the macroblock rasterscan in image scan;

- creating a reference in the picture header to the image scan index, and writing the picture header followed by the image scan data in the bitstream.

11. (Original) A method for reading a bitstream of compressed image data, wherein the bitstream includes, for each image, a picture header followed by image scan data, wherein the image scan data includes data corresponding to a plurality of macroblock rasterscans, wherein the data for each macroblock rasterscan includes data for a plurality of macroblocks for a band of lines in the image followed by padding, whereby data for each macroblock rasterscan terminates on a data boundary, the method comprising:

- reading a macroblock rasterscan from the image scan data;

- identifying an end of block code in the macroblock rasterscan; and

- reading a subsequent macroblock rasterscan starting from a data boundary immediately following the end of block code.

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12. (New) A computer information product, comprising:

a computer readable medium;

data stored on the computer readable medium that, when interpreted by a computer, defines a bitstream for compressed image data, comprising:

for each image, a picture header followed by image data,

wherein the image data includes data for a plurality of sets of macroblocks,

wherein each set of macroblocks includes a plurality of macroblocks, wherein the data for each set of macroblocks includes data for the plurality of macroblocks in the set followed by padding, whereby the data for each set of macroblocks terminates on a data boundary; and

wherein the picture header references an index that indicates a number of sets of macroblocks in the image data and the image data represented by each set of macroblocks, followed by entries of the index, and

wherein each entry in the index includes an offset for one of the sets of macroblocks in the image data.

13. (New) The computer information product of claim 12, wherein the picture header references the index by referencing an image descriptor, and wherein the image descriptor includes a reference to the index.

14. (New) A method for reading a bitstream of compressed image data, wherein the bitstream includes, for each image, a picture header followed by image data, wherein the image data includes data for a plurality of sets of macroblocks, wherein each set of macroblocks includes a plurality of macroblocks, wherein the data for each set of macroblocks includes data for the plurality of macroblocks in the set followed by padding, whereby the data for each set of macroblocks terminates on a data boundary; and wherein the picture header references an index that indicates a number of sets of macroblocks in the image data and the image data represented by each set of macroblocks, followed by entries of the index, and wherein each entry in the index includes an offset for one of the sets of macroblocks in the image data, the method comprising:  
accessing the picture header to locate the image scan index;

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accessing the image scan index to locate, for each macroblock rasterscan, the offset of the macroblock rasterscan in the image scan data;

retrieving each macroblock rasterscans according to the offsets from the image scan index.

15. (New) The method of claim 14, further comprising decoding each of the sets of macroblocks in parallel.

16. (New) The method of claim 14, wherein the picture header references the index by referencing an image descriptor, wherein the image descriptor includes a reference to the index, wherein the accessing the picture header comprises:

accessing the picture header to locate the image descriptor;

accessing the image descriptor to locate the index.

17. (New) A computer program product, comprising:

a computer readable medium;

computer program instructions stored on the computer readable medium that, when executed by a computer, instruct the computer to perform a method for reading a bitstream of compressed image data, wherein the bitstream includes for each image, a picture header followed by image data, wherein the image data includes data for a plurality of sets of macroblocks, wherein each set of macroblocks includes a plurality of macroblocks, wherein the data for each set of macroblocks includes data for the plurality of macroblocks in the set followed by padding, whereby the data for each set of macroblocks terminates on a data boundary; and wherein the picture header references an index that indicates a number of sets of macroblocks in the image data and the image data represented by each set of macroblocks, followed by entries of the index, and wherein each entry in the index includes an offset for one of the sets of macroblocks in the image data,

wherein the method comprises:

accessing the picture header to locate the index;

accessing the index to locate, for each set of macroblocks, the offset of the set of macroblocks in the image data;

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retrieving each set of macroblocks according to the offsets from the index.

18. (New) The computer program product of claim 17, wherein the method further comprises decoding each of the sets of macroblocks in parallel.

19. (New) The computer program product of claim 17, wherein the picture header references the index by referencing an image descriptor, wherein the image descriptor includes a reference to the index, wherein the accessing the picture header comprises:

accessing the picture header to locate the image descriptor;

accessing the image descriptor to locate the index.

20. (New) A method for writing a bitstream of compressed image data, comprising:

for each image, defining a picture header followed by image data, including:

defining a bitstream in memory for each set of a plurality of sets of macroblocks, wherein each bitstream includes data for a plurality of macroblocks followed by padding that makes each set of macroblocks terminate on a data boundary;

defining the image data to include data corresponding to the plurality of sets of macroblocks; and

defining an index that indicates a number of sets of macroblocks in the image data and the image data represented by each set of macroblocks, followed by entries of the index;

creating entries in the index such that each entry in the index includes an offset for one of the sets of macroblocks in the image data;

creating a reference in the picture header to the index, and

writing the picture header followed by the image data in the bitstream.

21. (New) A computer program product, comprising:

a computer readable medium;

computer program instructions stored on the computer readable medium that, when executed by a computer, instruct the computer to perform a method for writing a bitstream of compressed image data, comprising:

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for each image, defining a picture header followed by image data, including:

- defining a bitstream in memory for each set of a plurality of sets of macroblocks, wherein each bitstream includes data for a plurality of macroblocks followed by padding that makes each set of macroblocks terminate on a data boundary;
- defining the image data to include data corresponding to the plurality of sets of macroblocks; and
- defining an index that indicates a number of sets of macroblocks in the image data and the image data represented by each set of macroblocks, followed by entries of the index;
- creating entries in the index such that each entry in the index includes an offset for one of the sets of macroblocks in the image data;
- creating a reference in the picture header to the index, and

writing the picture header followed by the image data in the bitstream.

22. (New) A method for reading a bitstream of compressed image data, wherein the bitstream includes, for each image, a picture header followed by image data, wherein the image data includes data for a plurality of sets of macroblocks, wherein each set of macroblocks includes a plurality of macroblocks, wherein the data for each set of macroblocks includes data for the plurality of macroblocks in the set followed by padding, whereby the data for each set of macroblocks terminates on a data boundary, the method comprising:

- reading a set of macroblocks from the image data;
- identifying an end of block code in the set of macroblocks; and
- reading a subsequent set of macroblocks starting from a data boundary immediately following the end of block code.